



# Soil/Water Challenge: Student Activity Sheet

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Procedure:

Describe each of the three soil components.

Soil Component	Description
Clay	
Gravel	
Sand	

Predict and record how long you think it will take for water to reach the bottom of the tube. Record results.

Soil Component	Prediction (s)	Results (s)
Clay		
Gravel		
Sand		

## Challenge:

Manipulate the soil mixture in the the tube so that water reaches the bottom exactly 30 seconds after it is placed at the top of the tube. The tube must be filled to 3 inches from the bottom. Time begins when the first drop of water hits the soil and ends when the first drop of water reaches the bottom of the tube. You may:

- Use any soil component or combination of soil components in the tube.
- Use any amount of water, a little or a lot, but you must drop it in with the dropper.
- Apply the water from the dropper however quickly or slowly you want.

For each trial record

- An accurate description of the soil components in the tube
- A description of how you added water.
- The time it took the water to reach the bottom of the tube.

Trial #	Decription of the soil components.	Description of how you added water.	Time (s)
1			
2			
3			
4			
5			

**Reflection/Discussion:**

1. A farmer is considering buying land to grow corn. If rain immediately sinks below the surface of this land, the roots of his corn will be dry a few hours after the rain falls. On the other hand, if rain pools at the surface the roots remain wet and rot.

What mixture of soil types is the farmer looking for? \_\_\_\_\_  
 \_\_\_\_\_

2. Land far from towns cannot be served by a town’s sewer system. To build homes there, people use a system that treats sewage in a tank. The system then disperses wastewater just below the surface of the ground. If the soil is the right type, water sinks into the earth. If it is the wrong type, water rises to the top in rainy weather, cursing a health hazard.

What mixture of soil types should a homebuilder look for? \_\_\_\_\_  
 \_\_\_\_\_